

ABSTRACT

5 Bulk, superhard, B-C-N nanocomposite compact and method for preparing
thereof. The bulk, superhard, nanocomposite compact is a well-sintered compact
and includes nanocrystalline grains of at least one high-pressure phase of B-C-N
surrounded by amorphous diamond-like carbon grain boundaries. The bulk
compact has a Vicker's hardness of about 41-68 GPa. It is prepared by ball
10 milling a mixture of graphite and hexagonal boron nitride, encapsulating the ball-
milled mixture, and sintering the encapsulated ball-milled mixture at a pressure of
about 5-25 GPa and at a temperature of about 1000-2500 K.